

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of

Fredrik GUNNARSSON et al.

Atty. Ref.: 4147-187

Serial No. 10/594,122

TC/A.U.: 2617

Filed: September 25, 2006

Examiner: Kathy W. WANG-HURST

Confirmation No.: 7362

For: METHODS OF AND APPARATUSES FOR CELL-DIFFERENTIATED  
HANDOVER IN A MOBILE COMMUNICATIONS SYSTEMS

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July 10, 2009

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**APPEAL BRIEF**

Sir:

Appellants hereby **appeal** to the Board of Patent Appeals and Interferences from the last decision of the Examiner.

## TABLE OF CONTENTS

I.	REAL PARTY IN INTEREST.....	3
II.	RELATED APPEALS AND INTERFERENCES .....	3
III.	STATUS OF CLAIMS .....	3
IV.	STATUS OF AMENDMENTS.....	3
V.	SUMMARY OF CLAIMED SUBJECT MATTER.....	4
VI.	GROUND OF REJECTION TO BE REVIEWED ON APPEAL .....	8
VII.	ARGUMENT.....	9
VIII.	CLAIMS APPENDIX .....	17
IX.	EVIDENCE APPENDIX .....	25
X.	RELATED PROCEEDINGS APPENDIX.....	25

### **I. REAL PARTY IN INTEREST**

The real party in interest is Telefonaktiebolaget LM Ericsson (publ), a corporation of the country of Sweden.

### **II. RELATED APPEALS AND INTERFERENCES**

Appellants, the undersigned, and the assignee are not aware of any related appeals, interferences, or judicial proceedings (past or present), which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

### **III. STATUS OF CLAIMS**

Claims 39-48 and 52-66 are pending and rejected. The rejection of claims 39-48 and 52-66 is being appealed. Claims 1-38 and 49-51 are cancelled.

### **IV. STATUS OF AMENDMENTS**

Appellants submitted a Response after Non-Final Office Action on October 31, 2008 and received a Final Office Action on January 13, 2009 ("FOA") rejecting claims 38-66. Appellants submitted an Amendment on May 13, 2009 to simplify issues in which claims 38 and 49-51 were canceled and claims 39, 47, 48, and 54 were amended to address clerical issues and to correct dependencies necessitated by the canceled claims. Appellants also submitted on May 13, 2009 a Pre-Appeal Brief Request ("Request") for Review.

A Notice of Panel Decision in Pre-Appeal Brief Review was issued on May 29, 2009 indicating that the Request is improper for including claim amendments with the Request and also indicated that a conference would not be held. After a verbal request from Appellants' representative for reconsideration since the amendments are clerical in nature, a second Notice of

Panel Decision in Pre-Appeal Brief Review was issued on June 8, 2009 maintaining the earlier decision.

After further discussion with Appellants' representative, the Examiner issued an Advisory Action on June 16, 2009 indicating that the May 13, 2009 is entered for purposes of appeal. The rejection of claims as amended on May 13, 2009 is being appealed.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

A listing of each independent claim is and separately argued dependent claim is provided below including non-limiting example reference(s) to page and line number(s) of the specification and reference numerals to the drawings as originally submitted. The following claim mappings are not to be construed as limiting or to be used for claim construction.

### **A. Independent Claims**

39. A method of triggering a handover-related procedure for a user equipment in a cellular communications system (*Fig. 15; p.27, l.18 – p.28, l.6*), comprising:

classifying cells of said communications system into multiple handover-related classes based on radio coverage characteristics associated with said cells, each handover-related class comprises multiple cells (*Fig. 15; p.27, ll.20-22; Fig. 11; p.24, l.14 – p.25, l.8*);

assigning, for each handover-related class, a handover signal strength threshold (*Fig. 15; p.27, ll.22-28; Fig. 11; p.25, ll.8-11 et seq.*);

generating a handover triggering command based on measured signal quality for a communications link between said user equipment and a base station of a cell and on an assigned handover signal strength threshold associated with the handover-related class of said cell (*Fig. 15; p.27, l.28 – p.28, l.6*); and

transmitting said handover triggering command to said user equipment, said handover triggering command allowing said user equipment to perform said handover-related procedure involving said cell (*Fig. 15; p.27, l.28 – p.28, l.6*),

wherein a handover signal strength threshold associated to a first handover-related class of said multiple handover-related classes being different from a handover signal strength threshold associated to a second handover-related class of said multiple handover-related classes (*Fig. 15; p.27, ll.22-28; Fig. 11; p.25, ll.8-11; Figs. 8 and 9; p.16, l.30 – p.17, l.29 et seq.*).

40. A method for modifying a list of connected cells for a user equipment in a cellular communications system (*Fig. 12; p.25, l.18 – p.26, l.5*), comprising:

measuring a signal quality for a communications link between said user equipment and a base station of a cell (*Fig. 12; p.25, ll.19-28*);

receiving a handover signal strength threshold for said cell, said handover signal strength threshold being determined based on the radio coverage characteristics of said cell (*Fig. 12; p.25, l.28 – p.26, l.2*); and

modifying said list based on said measured signal quality and said received handover signal strength threshold (*Fig. 12; p.65, ll.3-5*).

52. A system for triggering a handover-related procedure for user equipment in a cellular communications system (*Figs. 7, 10, 15, 16; ; p.28, l.8 – p.30, l.13; Fig. 15; p.27, l.18 – p.28, l.6*), said system comprising:

means for classifying cells of said communications system into multiple handover-related classes based on radio coverage characteristics of said cells, each handover-related class

comprises multiple cells (*Fig. 16; p.28, l.19 – p.29, l.4; Fig. 15; p.27, ll.20-22; Fig. 11; p.24, l.14 – p.25, l.8*),

means for assigning, for each handover-related class, a handover signal strength threshold (*Fig. 16; p.29, ll.6-11; Fig. 15; p.27, ll.22-28; Fig. 11; p.25, ll.8-11 et seq.*);

means for generating a handover triggering command based on measured signal quality for a communications link between said user equipment and a base station of a cell and a handover signal strength threshold associated with the handover-related class of said cell (*Fig. 16; p. 29, l.29 – p.30, l.7.; Fig. 15; p.27, l.28 – p.28, l.6*); and

means for transmitting said handover triggering command to said user equipment, said handover triggering command allowing said user equipment to perform said handover-related procedure involving said cell (*Fig. 16; p. 29, ll.12-17; p. – p.30, ll.3-7; Fig. 15; p.27, l.28 – p.28, l.6*),

wherein a handover signal strength threshold associated to a first handover-related class of said multiple handover-related classes being different from a handover signal strength threshold associated to a second handover-related class of said multiple handover-related classes (*Fig. 15; p.27, ll.22-28; Fig. 11; p.25, ll.8-11; Figs. 8 and 9; p.16, l.30 – p.17, l.29 et seq.*).

55. A unit for modifying a list of connected cells for user equipment in a cellular communications system (*Fig. 17; p.30, l.15 – p.32, l.18*), said unit comprising:

means for measuring signal quality for a communications link between said user equipment and a base station of a cell (*Fig. 17, p.30, ll.18-28; Fig. 12; p.25, ll.19-28*);

means for receiving a handover signal strength threshold for said cell, said handover signal strength threshold being determined based on the radio coverage characteristics of said cell (*Fig. 17, p.30, l.30 – p.31, l.6; Fig. 12; p.25, l.28 – p.26, l.2*); and

means, connected to said measuring means and said receiving means, for modifying said list based on measured signal quality and said received handover signal strength threshold (*Fig. 17; p.31, ll.8-14; Fig. 12; p.65, ll.3-5*).

62. A user equipment of a cellular communications system (*Fig. 17; p.30, l.15 – p.32, l.18*), said unit comprising:

a signal quality measurer configured to measure signal quality for a communications link between said user equipment and a base station of a cell (*Fig. 17, p.30, ll.18-28; Fig. 12; p.25, ll.19-28*);

a handover requester configured to receive a handover signal strength threshold for said cell, said handover signal strength threshold being determined based on the radio coverage characteristics of said cell (*Fig. 17, p.30, ll.18-28; Fig. 12; p.25, ll.19-28*); and

a list modifier connected to said signal quality measurer and said handover requester, said list modifier configured to modifying a list of connected cells for said user equipment based on measured signal quality and said received handover signal strength threshold (*Fig. 17; p.31, ll.8-14; Fig. 12; p.65, ll.3-5*).

## **B. Dependent Claims**

41. The method according to claim 40, further comprising:

classifying cells of said communications system into multiple handover-related classes based on radio coverage characteristics of said cells, each handover-related class comprises multiple cells (*Fig. 11; p.24, l.14 – p.25, l.8*);

assigning, for each handover-related class, a handover signal strength threshold (*Fig. 11; p.25, ll.8-11*); and

determining to which handover-related class said cell is associated,

wherein a handover signal strength threshold associated to a first handover-related class of said multiple handover-related classes being different from a handover signal strength threshold associated to a second handover-related class of said multiple handover-related classes (*Fig. 11; p.25, ll.8-11; Figs. 8 and 9; p.16, l.30 – p.17, l.29*).

56. The unit according to claim 55, wherein cells of said communications system are classified into multiple handover-related classes based on radio coverage characteristics of said cells and each handover-related class being associated with a unique handover signal strength threshold (*Fig. 15; p.27, ll.22-28*).

63. The user equipment according to claim 62, wherein cells of said communications system are classified into multiple handover-related classes based on radio coverage characteristics of said cells and each handover-related class being associated with a unique handover signal strength threshold (*Fig. 15; p.27, ll.22-28*).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

- Whether claims 39-48 and 52-66 are unpatentable under 35 U.S.C. §103(a) over U.S. Patent No. 5,428,816 to Barnett et al (“Barnett”) in view of U.S. Patent No. 4,670,899 to Brody et al (“Brody”).



## VII. ARGUMENT

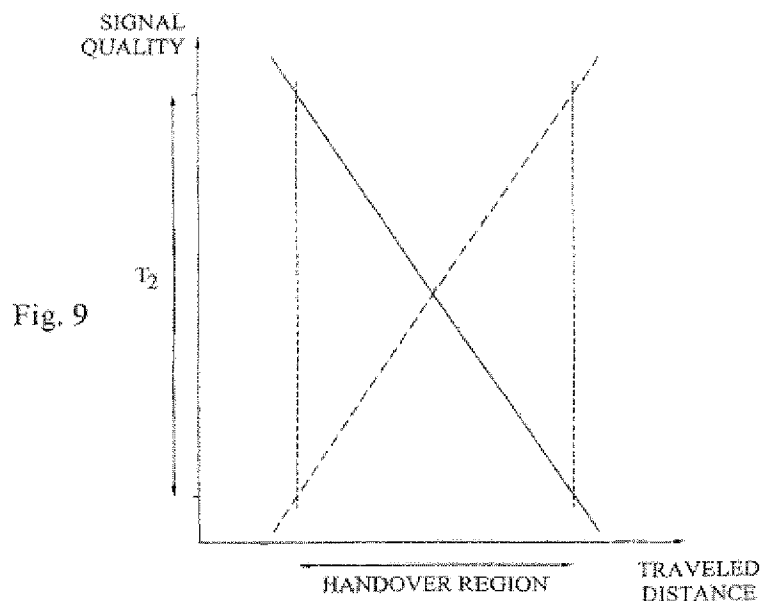
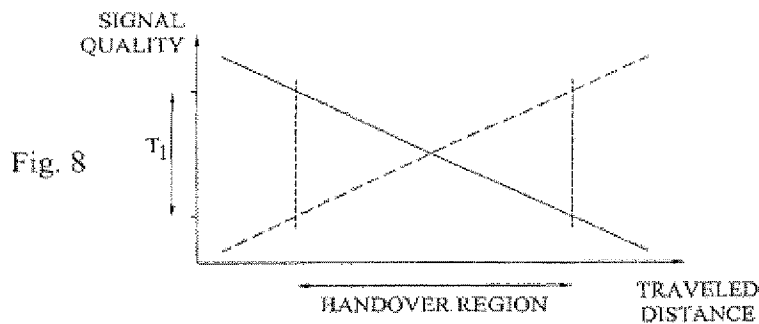
### The Rejection Of Claims 39-48 and 52-66 Should Be Reversed.

#### A. The Rejection of Independent Claims 39 and 52 Is Improper

Independent claims 39 and 52 are respectively directed toward method and system of triggering a handover-related procedure for a user equipment (UE) in a cellular communications system. The combination of Barnett and Brody fails to teach or suggest each and every feature of independent claims 39. For example, the Barnett and Brody combination fails to teach or suggest “wherein a handover signal strength threshold associated to a first handover-related class of said multiple handover-related classes being different from a handover signal strength threshold associated to a second handover-related class of said multiple handover-related classes.”

In claim 39, the cells of a communication system are classified into multiple handover-related classes and a different handover signal threshold is assigned to each class. For example, signal quality changes more rapidly per travelled distance for an intra-site (softer) handover (*see Fig. 9 disclosure reproduced below*) than for an inter-site (soft) handover (*see Fig. 8 reproduced below*).

By assigning a larger threshold  $T_2$  for the intra-site handover-related class than threshold  $T_1$  for the inter-site handover-related class, handover regions for the two classes can be made to be in a same order of size. In this way, the UE will have sufficient time to complete the handover procedure for both inter- and intra-site handovers while minimizing waste caused by the UE unnecessarily holding onto radio resources from multiple cells simultaneously.



The Examiner primarily relies upon Barnett to reject claim 39. *See FOA, pp.3-4*. Barnett does disclose classifying cells, but only to prioritize whether each of the neighboring cells will be included in a list of cells to be monitored for a mobile assisted handoff (MAHO). Barnett does not teach or suggest classifying the cells to assign different handover signal strength thresholds associated with different handover-related classes.

Barnett describes that in a typical MAHO, the base station initiates the MAHO by sending a measurement order to the mobile unit, and the order may accommodate up to twelve neighboring cell RF channels to be measured by the mobile unit. The twelve channels may be the maximum number of channels that the mobile unit may be able to measure concurrently. Once

the mobile unit reports the signal strengths of the twelve requested RF channels, the base station at the serving cell determines the best neighboring cell from the measurements reported by the mobile unit and initiates the handoff process. However, this may be substandard since there could be more than twelve neighboring cells in the measurement list and one of these yet to be measured cells may actually be better. *See Barnett, c.1, l.39 – c.2, l.2.*

To address this problem, Barnett discloses that each neighboring cell has a measurement class and a priority associated with a serving cell and the neighboring cells are ordered accordingly. To perform the MAHO, a measurement order command containing twelve highest ordered neighboring cell frequencies (RF channels) is sent to the mobile unit for measurement. The mobile unit performs the measurements of these twelve RF channels and reports the results to the base station of the serving cell. If a suitable neighboring cell meets all criteria for handoff, the handoff process to that particular cell is initiated. If none of the cells meet the handoff criteria, then a predetermined number of selected reported cells are replaced by traffic channels of other unreported cells and the measurement order of the base station controller is repeated. These steps are repeated until the measurement of at least one of the cells meets the predetermined handoff criteria. *See Barnett, c.5, l.34 – c.6, p.2.*

Barnett divides the cells into measurement classes and the class-specific handling of cells in connection with the measurement list since the standard stipulates at most twelve cells can be entered on the measurement list. *See c.1, ll.39-45.* Thus, if there are more than twelve potential adjacent candidate serving cells, the most important candidate serving cells are to be in the list and less preferred cells are entered in the list under critical “emergency” situations when no higher class cells are available or the higher class cells are not suitable. In Barnett, the classification of the neighboring cells merely determines the priority in which they will be scanned by the mobile unit (higher priority cells will be scanned more often).

However, Barnett does not disclose that the handover signal strength threshold associated with a first handover-related class is different from the handover signal strength threshold associated with a second handover-related class as recited in the claims. In other words, the measurement classes in Barnett are not the same as the claimed handover-related classes. Barnett teaches that a single threshold is used for determining whether to trigger the handover procedure. *See c.5, ll.6-8*. This single fixed threshold for handover is common to all cells of the communications system and is denoted RSSI-THP. *See c.6, ll.28-30*.

The Examiner refers to *c.7, ll.3-13 and c.8, ll.11-33* as relating to class-specific handover signal strength thresholds. *See FOA, p.4*. On the contrary, this relied-upon text simply states how cells belonging to different classes should be handled with regard to the measurement list. The text indicates that based on signal strength of the current serving cell as experienced by the mobile unit, different classes of neighboring cells are included in the measurement list. Specifically, class I neighboring cells are included in the measurement list upon activation of the serving cell. Class II neighboring cells are only included in the measurement list if the serving cell's signal strength drops below a level RSSI-MSR. Class III neighboring cells are included in the measurement list when the serving cell's signal strength of drops below a critical RF threshold RSSI-C level. The text in *c.8, ll.11-33* simply rephrases the text of *c.7, ll.3-13*.

It appears that the Examiner mistakenly equates the signal levels RSSI-MSR and RSSI-C in Barnett with the handover signal strength thresholds associated with the first and second handover-related classes as recited in the claim. This is an error. The RSSI-MSR and RSSI-C signals only determine whether or not certain classes of neighboring cells will be entered into the measurement list. The entry into the measurement list simply determines whether a particular neighboring cell will be scanned by the mobile unit for MAHO. RSSI-MSR and RSSI-C are not thresholds used to determine whether a handover will be performed.

The handoff occurs only if the scanning indicates that a neighboring cell meets the handoff criteria. *See c.5, ll.51-62; c.9, ll.55-56.* In Barnett, the handoff criteria itself is the same for all cells regardless of the cell classification. In other words, Barnett only discloses a single threshold for all handovers. Consequently, Barnett does not teach or suggest “wherein a handover signal strength threshold associated to a first handover-related class of said multiple handover-related classes being different from a handover signal strength threshold associated to a second handover-related class of said multiple handover-related classes.”

Brody does not correct this deficiency. In the FOA, the Examiner relies upon Brody only for the *radio coverage characteristics of the cells* part of the feature “classifying cells of said communications system into multiple handover-related classes based on radio coverage characteristics associated with said cells, each handover-related class comprises multiple cells” recited in claim 39.

The Examiner correctly does not rely upon Brody to disclose or even mention classification of cells. Brody further does not disclose any class-specific handover thresholds and in particular does not disclose assigning a first threshold to a first handover-related class and assigning a second, different threshold to a second handover-related class.

Thus, Barnett and Brody, even if assumed to be combinable, would merely guide one of ordinary skill towards using one and the same handover signal strength threshold for all the cells in the cellular communication system. Barnett and Brody taken either individually or as a combination guide the one of ordinary skill in a fundamentally different direction from what is claimed by consistently stating that the same signal handover signal strength threshold is used for different cells even if they belong to different classes.

This is sufficient to distinguish claim 39 over the combination of Barnett and Brody. But the following is noted. Since the handoff criteria is the same for all cells, it naturally follows that

Barnett does not teach or suggest “generating a handover triggering command based on measured signal quality for a communications link between said user equipment and a base station of a cell and on an assigned handover signal strength threshold associated with the handover-related class of said cell” as recited in claim 39.<sup>1</sup> Examiner correctly does not rely upon Brody to correct this deficiency.

For at least the reasons stated above, claim 39 and the claims dependent thereon are patentable over Barnett in view of Brody.

Similar arguments apply mutatis mutandis to independent claim 52. Consequently, claim 52 and the claims dependent thereon are also patentable over Barnett in view of Brody.

#### **B. The Rejection of Independent Claims 40, 55 and 62 Is Improper**

Independent claims 40, 55 and 62 are respectively directed toward a method, a unit, and a user equipment unit for modifying a list of connected cells for user equipment in a cellular communications system. The Barnett and Brody combination does not disclose all steps of the method recited in claim 40 including the steps of “receiving a handover signal strength threshold for said cell, said handover signal strength threshold being determined based on the radio coverage characteristics of said cell” and “modifying said list based on said measured signal quality and said received handover signal strength threshold.”

As demonstrated above, Barnett only discloses using the same fixed handover threshold for all cells regardless of their measurement classes. It logically follows that Barnett cannot disclose that the handover signal strength threshold is determined based on the radio coverage

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<sup>1</sup> It is also noted that Barnett does not disclose the transmission of a handover triggering command to the UE as recited in the claims. Barnett merely states that a handover is made once certain criteria are met. *See Barnett, c.9, ll.55-56.*

characteristics of any particular cell. Also as demonstrated, Brody does not disclose any class-specific handover thresholds, and thus is similarly deficient.

Thus, even if Barnett and Brody are assumed to be combinable, the combination would not guide one of ordinary skill towards determining signal strength thresholds based on the radio coverage characteristics of the cells. One of ordinary skill would instead have used a fixed threshold or a set of fixed thresholds regardless of varying radio coverage characteristics for the cells. Consequently, the combination of Barnett and Brody does not provide guidance towards using handover signal strength thresholds that are determined class-specific based on the radio coverage characteristics of the cells. Barnett and Brody in clear contrast guides one of ordinary skill in a fundamentally different direction by using fixed thresholds for the cells and that these thresholds are not dependent on any radio coverage characteristics.

For at least the reasons stated above, claim 40 and the claims dependent thereon are patentable over Barnett in view of Brody.

Similar arguments apply mutatis mutandis to independent unit claim 55 and independent user equipment claim 62. Consequently, claims 55 and 62 and the claims dependent thereon are patentable over Barnett in view of Brody.

### **C. The Rejection of Dependent Claims 41, 56 and 63 Is Improper**

Claim 41 recites, in part “assigning, for each handover-related class, a handover signal strength threshold” and “wherein a handover signal strength threshold associated to a first handover-related class of said multiple handover-related classes being different from a handover signal strength threshold associated to a second handover-related class of said multiple handover-related classes.” It is demonstrated above that the Barnett and Brody combination does not teach or suggest these features.

Claims 56 and 63 recite, in part “wherein cells of said communications system are classified into multiple handover-related classes based on radio coverage characteristics of said cells and each handover-related class being associated with a unique handover signal strength threshold.” Clearly, if the Barnett and Brody combination does not disclose the first and second signal strength thresholds being different from each other, then the combination also cannot disclose each handover-related class being associated with a unique handover signal strength threshold.

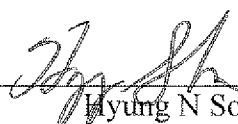
### **CONCLUSION**

In conclusion it is believed that the application is in clear condition for allowance; therefore, early reversal of the Final Rejection and passage of the subject application to issue are earnestly solicited.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

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## **VIII. CLAIMS APPENDIX**

Claims 1-38 (Cancelled)

39. A method of triggering a handover-related procedure for a user equipment in a cellular communications system, comprising:

classifying cells of said communications system into multiple handover-related classes based on radio coverage characteristics associated with said cells, each handover-related class comprises multiple cells;

assigning, for each handover-related class, a handover signal strength threshold;

generating a handover triggering command based on measured signal quality for a communications link between said user equipment and a base station of a cell and on an assigned handover signal strength threshold associated with the handover-related class of said cell; and

transmitting said handover triggering command to said user equipment, said handover triggering command allowing said user equipment to perform said handover-related procedure involving said cell,

wherein a handover signal strength threshold associated to a first handover-related class of said multiple handover-related classes being different from a handover signal strength threshold associated to a second handover-related class of said multiple handover-related classes.

40. A method for modifying a list of connected cells for a user equipment in a cellular communications system, comprising:

measuring a signal quality for a communications link between said user equipment and a base station of a cell;

receiving a handover signal strength threshold for said cell, said handover signal strength threshold being determined based on the radio coverage characteristics of said cell; and

modifying said list based on said measured signal quality and said received handover signal strength threshold.

41. The method according to claim 40, further comprising:

classifying cells of said communications system into multiple handover-related classes based on radio coverage characteristics of said cells, each handover-related class comprises multiple cells;

assigning, for each handover-related class, a handover signal strength threshold; and

determining to which handover-related class said cell is associated,

wherein a handover signal strength threshold associated to a first handover-related class of said multiple handover-related classes being different from a handover signal strength threshold associated to a second handover-related class of said multiple handover-related classes.

42. The method according to claim 40, further comprising:

measuring a signal quality for a communications link between said user equipment and a base station of a current best serving cell to which said user equipment is connected; and

generating a list update request based on a comparison between said measured signal quality of said current best serving cell, said measured signal quality of said cell and said handover signal strength threshold.

43. The method according to claim 42, wherein said modifying step comprises:

receiving a list update command generated based on said list update request; and

updating said list based on said received list update command.

44. The method according to claim 42, wherein said request generating step comprises generating a cell add request if said signal quality of said cell is larger than said signal quality of said current cell subtracted by said handover signal strength threshold.

45. The method according to claim 42, wherein said request generating step comprises generating a cell delete request if said signal quality of said cell is smaller than said signal quality of said current cell subtracted by said handover signal strength threshold.

46. The method according to claim 39, wherein said generating step comprises:  
receiving a handover-triggering request from said user equipment, said request being generated based on said measured signal quality of said cell, said handover signal strength threshold and measured signal quality for a communications link between said user equipment and a base station of a current best serving cell to which said user equipment is connected; and  
generating said handover triggering command based on said request.

47. The method according to claim 39, further comprising:  
determining communications traffic statistics for said cellular communications system; and  
re-classifying said cells of said communications system based on said radio coverage characteristics of said cells and said determined communications traffic statistics.

48. The method according to claim 39, wherein each handover-related class being associated with a unique handover signal strength threshold.

49-51. (Cancelled)

52. A system for triggering a handover-related procedure for user equipment in a cellular communications system, said system comprising:

means for classifying cells of said communications system into multiple handover-related classes based on radio coverage characteristics of said cells, each handover-related class comprises multiple cells,

means for assigning, for each handover-related class, a handover signal strength threshold;

means for generating a handover triggering command based on measured signal quality for a communications link between said user equipment and a base station of a cell and a handover signal strength threshold associated with the handover-related class of said cell; and

means for transmitting said handover triggering command to said user equipment, said handover triggering command allowing said user equipment to perform said handover-related procedure involving said cell,

wherein a handover signal strength threshold associated to a first handover-related class of said multiple handover-related classes being different from a handover signal strength threshold associated to a second handover-related class of said multiple handover-related classes.

53. The system according to claim 52, further comprising means for receiving a handover-triggering request from said user equipment, said request being generated based on said measured signal quality of said cell, said handover signal strength threshold and measured signal quality for a communications link between said user equipment and a base station of a

current best serving cell to which said user equipment is connected, and said generating means is configured for generating said handover triggering command based on said request.

54. The system according to claim 52, wherein said system is provided in a radio network controlling node in said communications system.

55. A unit for modifying a list of connected cells for user equipment in a cellular communications system, said unit comprising:

means for measuring signal quality for a communications link between said user equipment and a base station of a cell;

means for receiving a handover signal strength threshold for said cell, said handover signal strength threshold being determined based on the radio coverage characteristics of said cell; and

means, connected to said measuring means and said receiving means, for modifying said list based on measured signal quality and said received handover signal strength threshold.

56. The unit according to claim 55, wherein cells of said communications system are classified into multiple handover-related classes based on radio coverage characteristics of said cells and each handover-related class being associated with a unique handover signal strength threshold.

57. The unit according to claim 55, wherein said measuring means is configured for measuring signal quality for a communications link between said user equipment and a base station of a current best serving cell to which said user equipment is connected, and said unit

further comprising means for generating a list update request based on a comparison between said measured signal quality of said current cell, said measured signal quality of said cell and said handover signal strength threshold.

58. The unit according to claim 57, further comprising means for receiving a list update command generated based on said list update request, and said modifying means being configured for updating said list based on said received list update command.

59. The unit according to claim 57, wherein said generating means comprises means for generating a cell add request if said generating means finds that said signal quality of said cell is larger than said signal quality of said current cell subtracted by said handover signal strength threshold.

60. The unit according to claim 57, wherein said generating means comprises means for generating a cell delete request if said generating means finds that said signal quality of said cell is smaller than said signal quality of said current cell subtracted by said handover signal strength threshold.

61. The unit according to claim 55, wherein said unit is provided in said user equipment.

62. A user equipment of a cellular communications system, said unit comprising:  
a signal quality measurer configured to measure signal quality for a communications link between said user equipment and a base station of a cell;

a handover requester configured to receive a handover signal strength threshold for said cell, said handover signal strength threshold being determined based on the radio coverage characteristics of said cell; and

a list modifier connected to said signal quality measurer and said handover requester, said list modifier configured to modifying a list of connected cells for said user equipment based on measured signal quality and said received handover signal strength threshold.

63. The user equipment according to claim 62, wherein cells of said communications system are classified into multiple handover-related classed based on radio coverage characteristics of said cells and each handover-related class being associated with a unique handover signal strength threshold.

64. The user equipment according to claim 62,  
wherein said signal quality measurer is arranged to measure signal quality for a communications link between said user equipment and a base station of a current best serving cell to which said user equipment is connected, and

wherein said handover requester comprises a comparator configured to compare said measured signal quality of said current cell, said measured signal quality of said cell and said handover signal strength threshold, wherein said handover requester is configured to generate a list update request based on a comparison made by the comparator.

65. The user equipment according to claim 64, wherein said list modifier is arranged to receive a list update command generated based on said list update request, and arranged to update said list based on said received list update command.

66. The user equipment according to claim 64, wherein said handover requester further comprises:

a list entry adder configured to generate a cell add request when the comparator finds that said signal quality of said cell is larger than said signal quality of said current cell subtracted by said handover signal strength threshold; and

a list entry deleter configured to generate a cell delete request when the comparator finds that said signal quality of said cell is smaller than said signal quality of said current cell subtracted by said handover signal strength threshold.



**IX. EVIDENCE APPENDIX**

None.

**X. RELATED PROCEEDINGS APPENDIX**

None.